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MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PROGRAM COMPLIANCE INSPECTION

BALTIMORE COUNTY, MARYLAND

FINAL INSPECTION REPORT

Inspection Date:
March 8–9, 2011

Report Date:
September 19, 2011

CONTENTS

Major Documents and Abbreviations Used

Short-name	Document Title and Date
COMAR	*Code of Maryland Regulations*
Industrial General Permit	*Maryland Department of the Environment /National Pollutant Discharge Elimination System General Discharge Permit for Storm Water Associated with Industrial Activities*, No. 02-SW, effective December 1, 2002
Permit	*Maryland Department of the Environment /National Pollutant Discharge Elimination System Municipal Separate Storm Sewer Systems Permit* No. MD0068314 (99-DP-3317), effective June 15, 2005

Introduction

On March 8–9, 2010, the U.S. Environmental Protection Agency (EPA), Region 3, and an EPA contractor, PG Environmental, LLC (hereinafter, collectively, the EPA Inspection Team) conducted an inspection of the Baltimore County (hereinafter, County or Permittee) Municipal Separate Storm Sewer System (MS4) Program. Discharges from the County's MS4 are regulated under the *Maryland Department of the Environment (MDE)/National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems Permit* No. MD0068314 (99-DP-3317) (hereinafter, the Permit), effective June 15, 2005. The Permit expired on June 15, 2010, but has been administratively extended by MDE.

The County encompasses approximately 384,825 acres; it has 2,100 stream miles, and 217 miles of shoreline on the Chesapeake Bay in the southeast portion of the County. The County borders Pennsylvania to the north and is surrounded by Harford County to the east, Baltimore City to the south, Howard County to the southwest, and Carroll County to the west. According to County officials, the total population of the County was estimated to be approximately 800,000 people at the time of the inspection. There are no combined sewer systems in the County. Approximately 90 percent of the County population is served by the sanitary sewer system; the remaining 10 percent is served by septic systems.

The Permit authorizes the County to discharge stormwater runoff and certain non-stormwater discharges to and from the MS4 owned and operated by the County, under the Permit terms and conditions. The County's receiving waters include 14 different watersheds, 3 drinking water reservoirs, and 6 tidal water segments.

The purpose of the inspection was to obtain information that will assist EPA in assessing the County's compliance with the requirements of the Permit. The inspection schedule is presented in Appendix A.

The EPA Inspection Team obtained information through a series of interviews with representatives from the Department of Environmental Protection and Sustainability (DEPS), the Department of Public Works (DPW), and Baltimore County Schools, along with a series of site visits, record reviews, and field verification activities. The primary representatives involved in the inspection were the following:

Baltimore County MS4 Program Compliance Inspection: March 8–9, 2011	
Department of Environmental Protection and Sustainability	Thomas L. Vidmar, Deputy Director
Watershed Management & Monitoring	Steven L. Stewart, Manager Nancy Pentz, Natural Resource Specialist Kevin Brittingham, Watershed Monitoring Supervisor
Stormwater Engineering	Al Wirth, Manager
Capital Program and Operations	Candace L. Croswell, Manager
Baltimore County Public Schools	Bob Merrey, Environmental Services Supervisor
Department of Public Works	Radu Zamfirache, Engineer III
EPA Representatives	Chuck Schadel, EPA Region 3 Allison Graham, EPA Region 3
EPA Contractors	Max Kuker, PG Environmental, LLC Scott Coulson, PG Environmental, LLC Katie Bradshaw, PG Environmental, LLC

Wet weather conditions were experienced during some of the inspection activities. Weather history reports[1] indicate that approximately 0.02 inch of precipitation fell in the Baltimore County area on March 9, 2011.

[1] Weather history reports for Baltimore Washington International (BWI) Airport were obtained from the National Weather Service website (http://www.weather.gov/climate/index.php?wfo=lwx).

Information Obtained Regarding Compliance with the Permit

During the MS4 inspection, the EPA Inspection Team obtained documentation and other supporting evidence regarding compliance with the Permit. Pertinent information obtained during the inspection is presented in this report. The presentation of inspection observations in this report does not constitute a formal compliance determination or notice of violation. All referenced documentation used as supporting evidence is provided in Appendix B, and photo documentation is provided in Appendix C.

Section A. Stormwater Management and Stormwater Management BMP Inspections

As a component of this inspection, the EPA Inspection Team conducted a review of the County's Stormwater Management program and Stormwater Management Best Management Practice (BMP) inspection program in comparison to Parts III.E.1 and III.E.2 of the Permit and the Environmental Article, Title 4, Subtitle 2, *Annotated Code of Maryland*. The *Code of Maryland Regulations* (COMAR) 26.17.02 includes regulations that govern stormwater management for the development, or redevelopment of land with the goal of maintaining predevelopment runoff characteristics and reducing stream channel erosion, pollution, siltation, sedimentation, and local flooding.

The EPA Inspection Team reviewed procedures related to the implementation of the requirements in both the Permit and COMAR, including tracking and reporting of the implementation of the *2000 Maryland Stormwater Design Manual* as well as identifying, conducting, and documenting maintenance inspections for stormwater management BMPs in the County. Site visits were used to verify these implementation procedures.

A.1. Stormwater Management Site Visits

On March 8–9, 2011, the EPA Inspection Team conducted two site visits to stormwater management facilities within the County. The purposes of the site visits were to document site conditions and to assess the County's oversight and maintenance activities for stormwater management facilities. Summary observations pertaining to these two sites are presented below. All referenced photographs are contained in Appendix C, Photograph Log.

Long Quarter Branch Retrofit

The Long Quarter Branch Retrofit is located near the intersection of Winsford Road and Fairmount Avenue. The retrofit was observed to divert stormwater from a paved stormwater drainage canal into the stormwater management structure (see Appendix C, Photographs 1 and 2). The Long Quarter Branch Retrofit appears to receive stormwater from the surrounding roadways, commercial properties, multi-family residential developments, and specifically from active construction activities at the Carver Center for Arts and Technology.

It was noted that turbid water was visible in the stormwater entering the structure, and it appeared to be a result of active construction activities at the Carver Center for Arts and Technology approximately 0.2 mile to the west of the structure (see Appendix C, Photographs 2 and 3). The Carver Center construction site was visited during this inspection to confirm the source of the turbidity in the structure. The EPA Enforcement Officer, a member of the EPA Inspection Team, conducted a more thorough investigation of erosion and sediment control practices at the site, as well as documentation associated with the NPDES program for storm water discharges associated with construction. The required documentation (i.e., self-inspection reports, permit coverage, and erosion and sediment control (E&S) plan) was present and of an acceptable quality. The Enforcement Officer identified several areas of the site where erosion was present. The site operator indicated that a heavy rain had occurred recently and that the erosion would be repaired within 2 days. All E&S controls required by the approved E&S plan were installed.

According to a County representative, maintenance on the Long Quarter Branch stormwater management structure was completed in 2008 by a contractor and again in 2010 by the County.

The Quarters

The Quarters is an apartment complex located at 948 Dulaney Valley Road (at the intersection of Dulaney Valley Road and Southerly Road). The County approved plans for the complex in 2005, and the complex was subsequently constructed. As part of construction of the apartment complex, a sand filter stormwater management structure was implemented under the parking garage (see Appendix C, Photographs 4 and 5). Stormwater from the property drains to the sand filter structure, where it is filtered before being discharged.

The documentation provided by the County indicated that the County had implemented its review process in accordance with COMAR and the *2000 Maryland Stormwater Design Manual*.

Section B. Illicit Discharge Detection and Elimination

Part III.E.4 of the Permit requires that "Baltimore County shall maintain its illicit connection detection and elimination program to ensure that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated."

Observation 1. Illegal Dumping and Spills

Part III.E.4 of the Permit requires the County to "maintain an illicit detection and elimination program to ensure that all discharges to and from the municipal separate storm sewer system that are not comprised entirely of stormwater are either permitted by MDE or eliminated."

County representatives stated that they had not documented or reported IDDE education and outreach for the public, and therefore no documentation was available. County representatives stated that the County had not developed public education materials to be distributed or made available to the public regarding IDDE or spills. County representatives further explained that volunteers from the public participate in a County-sponsored Stream Watch Program, which organizes and completes stream cleanup activities and monitors changes to assigned stream segments. The County's 2010 Annual Report indicates that these Steam Watch Program volunteers receive "field training and the use of the GIS system." The volunteer training is not aimed at identifying illicit discharges and spills or educating the public about the harmful effects of such discharges.

In addition, County representatives explained that training on IDDE and spills for municipal staff, including field employees and operators, had not been conducted. In particular, field employees who might observe illegal dumping or spills had not been trained in proper identification and reporting procedures.

Furthermore, procedures for tracking and reporting of IDDE-related complaints had not been developed for complaints received by County departments outside the DEPS. The Watershed Monitoring section of DEPS is responsible for the investigation, tracking, and reporting of illicit discharges. County representatives stated that the procedures apply, once the Watershed Monitoring section receives a report of an illicit discharge. County representatives stated that staff from the Watershed Monitoring section conduct an initial review of the reports and either conduct a full investigation or route the reports to the appropriate County department or to MDE for further investigation and/or elimination depending on the nature of the complaint. County representatives explained that investigation procedures had been established for tracking, follow-up, and reporting of illicit discharge complaints handled by DEPS, including using a spreadsheet to document the date, complaint, action taken, status, and location.

If the Watershed Monitoring section has to refer a complaint outside DEPS, however, the complaint is labeled as having been referred to another agency or department and is no longer tracked.

In addition, if complaints are not initially received by the Watershed Monitoring section of DEPS, they are not tracked, documented, or reported to the Watershed Monitoring section of DEPS unless the agency or department informs the Watershed Monitoring section of the complaint. There are no procedures to ensure that complaints received by other County Departments are adequately responded to or that they are reported to the Watershed Monitoring section of DEPS for tracking (i.e., for an understanding of what types of pollutants may be entering their system) and for annual reporting purposes.

Under this approach, the County Watershed Monitoring section does not track all referrals through resolution.

Observation 2. Public Reporting of Spills and Other Illicit Discharges

Part III.E.7.a of the Permit requires the County to "establish and publicize a compliance hotline for the public reporting of suspected illicit discharges, illegal dumping, and spills."

As reported in the County's 2010 Annual Report, the Watershed Monitoring section processed a total of 75 complaints during the 2010 reporting period; 33 of the complaints were citizen complaints, and the remaining complaints were from DEPS or other agencies. Of the 75 complaints, 45 were referred to other agencies (e.g., MDE). The County estimates that 13 percent of the complaints involve potential illicit discharges or connections.

A reporting system (i.e., a dedicated local telephone number or hotline) for public reporting of spills and other illicit discharges had not been established or publicized. During normal business hours, the front desk staff at DEPS receives call complaints and directs them to the Watershed Monitoring section. However, no procedures had been developed for reporting of illicit discharges after business hours. **[NOTE: Is the fact that they don't have a number for "after hours" the inadequacy ?]**

In addition, procedures had not been developed for the recording and tracking of complaints related to spills or illicit discharges that are received by departments outside DEPS. As a result, illicit discharges reported to other departments or agencies might not be tracked, investigated, and reported for NPDES purposes.

Observation 3. Surveys of Commercial and Industrial Watersheds

Part III.E.4.b of the Permit requires the County to "conduct routine surveys of commercial and industrial watersheds for discovering and eliminating pollutant sources."

The County is using hot spot investigations (HSIs) for surveying commercial and industrial watersheds in the County. HSIs are conducted during the completion of small watershed action plans (SWAPs). Baltimore County has 22 SWAP areas, totaling 383,127 acres. To date, SWAPs and HSIs have been completed in five of the SWAP areas, totaling 60,179 acres or approximately 15.7 percent. Of the five completed SWAPs, four have been completed by

Baltimore County and/or a consultant and one has been completed by Harford County. Development of procedures for conducting HSIs began in 2008; the remaining 17 SWAPs are scheduled for completion by 2014.

Starting in 2010, the County began using contractors to complete the HSIs for the remaining 17 SWAPs that are in progress. Of the remaining 17 SWAPs that are in development, 15 are scheduled to be completed by contractors and two are scheduled to be completed by DEPS.

Section C. County Property Management and Road Maintenance

Part III.E.5 of the Permit requires the County to "identify all County-owned facilities requiring NPDES stormwater general permit coverage and submit Notices of Intent (NOI) to MDE for each. The status of pollution prevention plan development and implementation shall be submitted annually."

The County's 2010 Annual Report indicates DEPS estimated that approximately 30 facilities may require coverage under the *MDE NPDES General Discharge Permit for Storm Water Associated with Industrial Activities*, No. 02-SW (hereinafter, the Industrial General Permit), effective December 1, 2002.

C.1. County Property Management Site Visits

On March 8–9, 2011, the EPA Inspection Team conducted eight site visits at County-owned facilities and municipal activities within the County. All referenced photographs are contained in Appendix C, Photograph Log.

County Department of Education North Point Bus Facility – 4242 North Point Road, Baltimore, Maryland

The North Point Bus Facility (see Appendix C, Photograph 6) is used for various Department of Education activities associated with the County's MS4. The facility Grounds Maintenance Supervisor explained that the site was previously a lumber business, and the Department of Education began its activities in October 2010.

The Department of Education Environmental Services Supervisor explained that a Notice of Intent (NOI) had been drafted, but it had not been submitted to MDE to obtain Industrial General Permit coverage. He also stated that a Stormwater Pollution Prevention Plan (SWPPP) had not yet been developed. On March 16, 2011, MDE provided the EPA Inspection Team with a list of facilities where Industrial General Permit coverage had been obtained (hereinafter, MDE Permitted Facilities Inventory; see Appendix B, Exhibit 1). The EPA Inspection Team reviewed the MDE Permitted Facilities Inventory and confirmed that the North Point Bus Facility did not have Industrial General Permit coverage.

Back River is approximately 0.56 mile to the west of the facility, and Bear Creek is approximately 0.27 mile to the east. There is an unnamed lake, possibly a natural lake, immediately south of the facility, and it might serve as the initial receiving water. The EPA Inspection Team observed the following with regard to pollution prevention and good housekeeping at the facility:

- The Department of Education conducts regulated industrial activity at the North Point Bus Facility, as specified in Part I.B of the Industrial General Permit and as further defined in Title 40 of the *Code of Federal Regulations* (CFR), section 122.26(b)(14). As evidenced below, the observed industrial activities included mechanical repairs, fueling, and lubrication of buses and other equipment.
- A fueling area was located in the southern portion of the site (see Appendix C, Photographs 7 and 8). The Department of Education maintains both underground storage

tanks (USTs) and above ground fuel storage tanks (AGSTs) that are actively used for vehicle and equipment fueling. The fueling area had not been provided with overhead coverage, but a spill kit was present at the fueling area and inside the nearby vehicle maintenance shop. The Department of Education Environmental Services Supervisor explained that a Spill Prevention, Control and Countermeasures (SPCC) Plan had not been developed in association with the fuel and various other petroleum products stored at the facility.

- A bus-washing area, which was used for vehicle cleaning operations, was located outside the vehicle maintenance shop in the southern portion of the site (see Appendix C, Photograph 9). A hose bib and detergent were observed at the washing area (see Appendix C, Photographs 9 through 11). The facility Transportation Maintenance Supervisor explained that out of approximately 80 buses that are stored on-site, nearly half are washed at this location. The bus-washing area was located outside on an impervious surface, but wash water containment BMPs had not been installed (see Appendix C, Photograph 12). Furthermore, the EPA Inspection Team observed a storm drain inlet down-gradient of the bus-washing area on the west side of the vehicle maintenance shop (see Appendix C, Photograph 12).
- A vehicle maintenance shop was present in the southern portion of the site (see Appendix C, Photograph 9). Used vehicle and equipment parts were stored uncovered, outside one of the maintenance bays on the eastern side of the maintenance shop (see Appendix C, Photograph 13). The main vehicle maintenance bay was located at the southwest corner of this building (see Appendix C, Photograph 14). The facility Transportation Maintenance Supervisor explained that the vehicle maintenance shop is used to conduct routine bus repairs such as fluid changes and work on lights, brakes, and exhaust systems. This activity constitutes vehicle rehabilitation, mechanical repairs, and lubrication.
- A storm drain inlet was located outside the main vehicle maintenance bay and down-gradient from the aforementioned fueling area in the southern portion of the site (see Appendix C, Photographs 14 and 15). A flow pathway was observed leading from the fueling area to the storm drain inlet, indicating the general drainage pattern at the location.
- A roadway salt stockpile was located in the northeast corner of the site, adjacent to the facility boundary and fenceline (see Appendix C, Photograph 16). White salt residue was observed on the pavement, leading from the stockpile to the east (see Appendix C, Photograph 17). Salt residue was also present beyond the fenceline, and salt had migrated toward an area of standing water along the I-695 beltway inner loop (see Appendix C, Photographs 18 and 19).

County Office of Budget and Finance, Essex Fuel Center (a.k.a., Shop II) – 511 Mace Avenue Baltimore, Maryland

The Essex Fuel Center (see Appendix C, Photograph 20) is used for maintenance service and fueling of County vehicles.

The DEPS Natural Resource Specialist explained that the County Office of Budget and Finance had not submitted NOIs to MDE to obtain Industrial General Permit coverage for their vehicle operations and maintenance facilities. The EPA Inspection Team reviewed the MDE Permitted

Facilities Inventory and confirmed that the Essex Fuel Center did not have Industrial General Permit coverage.

Northeast Creek is approximately 0.58 mile to the west of the facility, and Duck Creek is approximately 0.39 mile to the east. The EPA Inspection Team observed the following with regard to pollution prevention and good housekeeping at the facility:

- The County Office of Budget and Finance conducts regulated industrial activity at the Essex Fuel Center, as specified in Part I.B of the Industrial General Permit and as further defined at 40 CFR 122.26(b)(14). As evidenced below, the observed industrial activities included mechanical repairs, fueling, and lubrication of County Office of Budget and Finance fleet vehicles.
- A fueling station was located along Mace Avenue (see Appendix C, Photograph 21). The County Office of Budget and Finance maintains an AGST and USTs that are actively used for vehicle fueling (see Appendix C, Photographs 22 and 23). The facility Maintenance Manager explained that controlled, 24-hour access is provided to County employees for the use of the fuel pumps (see Appendix C, Photograph 24). The fueling area, however, had not been provided with overhead coverage, and spill cleanup materials (e.g., absorbent) were available only inside the maintenance shop during business hours.
- A vehicle maintenance shop was located inside the main building present at this site (see Appendix C, Photograph 25). The facility Maintenance Manager explained that the vehicle maintenance shop is used to conduct routine County Office of Budget and Finance fleet vehicle repairs such as fluid changes, brake repair, and tune-ups. This activity constitutes vehicle rehabilitation, mechanical repairs, and lubrication. Notably, the facility was equipped with a self-contained pumping system to transfer used motor oil from inside the vehicle maintenance shop to an outdoor used oil storage tank (see Appendix C, Photographs 26 and 27). Although the used oil tank was protected from vehicle traffic, an unlabeled and partially filled drum was stored without containment or protection along the east side of the vehicle maintenance shop (see Appendix C, Photograph 28). The facility Maintenance Manager indicated that the drum contained a cleaning product or detergent.
- The facility Maintenance Manager stated "it is rare that vehicles are washed at the facility."
- A storm drain inlet was observed to the southeast of the facility, near the intersection of Wolf Street and George Avenue (see Appendix C, Photographs 29).

County Department of Education Kenwood Bus Facility – 600 Stemmers Run Road, Baltimore, Maryland

The Kenwood Bus Facility (see Appendix C, Photograph 30) is used for various Department of Education activities associated with the County's MS4, including the following: (1) bus, truck, and grounds equipment maintenance (including mechanical repairs, fueling, steam cleaning, and lubrication); (2) material storage (e.g., vehicle parts, roadway salt); and (3) vehicle and equipment storage (including County buses).

Part IV.B.2 of the Industrial General Permit requires that a SWPPP be completed and implemented prior to submitting an NOI. The Department of Education Environmental Services

Supervisor stated that an NOI had been submitted to MDE in approximately November 2007 to obtain Industrial General Permit coverage for multiple Department of Education facilities, but SWPPPs had not yet been developed. The EPA Inspection Team reviewed the MDE Permitted Facilities Inventory and confirmed that the Kenwood Bus Facility had Industrial General Permit coverage under Registration No. 02SW2115.

Northeast Creak is approximately 0.50 mile to the west of the facility, and Middle River is located approximately 1.0 mile to the east. The EPA Inspection Team observed the following with regard to pollution prevention and good housekeeping at the facility:

- A roadway salt stockpile was located in the northwest corner of the site, adjacent to the facility boundary and fenceline (see Appendix C, Photograph 31). White salt residue was observed on the pavement, leading from the stockpile to the north (see Appendix C, Photograph 32) and behind the stockpile leading toward the facility boundary and fenceline (see Appendix C, Photograph 33). Salt was present beyond the fenceline within a rock-lined ditch (see Appendix C, Photographs 34 and 35) that is tributary to a drainage conveyance along the adjacent Northeast Corridor railway (see Appendix C, Photographs 36 and 37). It should also be noted that uncovered salt product was observed at two other locations at the facility—the eastern portion of the bus storage lot (see Appendix C, Photograph 38), and the southern entranceway to the bus storage lot (see Appendix C, Photograph 39). Part IV.C.5 of the Industrial General Permit states that "storage piles of salt used for deicing or other commercial or industrial purposes shall be enclosed or covered to prevent exposure to precipitation."
- A bus washing area, used for vehicle cleaning operations, was located on the west side of the bus maintenance shop in the central portion of the site. A hose bib, bucket, and cleaning brush were observed at the washing area (see Appendix C, Photograph 40). A 55-gallon drum, which was labeled as a cleaner/degreaser, was present on the west side of the bus maintenance shop (see Appendix C, Photographs 41 and 42). The bus-washing area was located outside on an impervious surface, but wash water containment BMPs had not been installed (see Appendix C, Photograph 40). Drainage features were not observed in the immediate vicinity of bus-washing area (see Appendix C, Photograph 43).

County Department of Public Works, Bureau of Highways, Perry Road Facility (Shop 7-1) – 7801 Perry Road, Baltimore, Maryland

The Perry Road Facility is used for various Bureau of Highways activities associated with the County's MS4, including the following: (1) fueling of Bureau of Highways vehicles and equipment; (2) material storage (e.g., cold mix asphalt, asphalt millings, roadside waste, green waste, roadway salt, liquid de-icer); and (3) vehicle and equipment storage (including a street sweeper, snow removal equipment, tree trimming equipment, and other highway maintenance equipment).

The EPA Inspection Team reviewed the MDE Permitted Facilities Inventory and confirmed that the Perry Road Facility had Industrial General Permit coverage under Registration No. 02SW1970. The facility SWPPP was also viewed as a component of the site visit.

The EPA Inspection Team observed the following with regard to pollution prevention and good housekeeping at the facility:

- A vehicle washing area, which was used for vehicle cleaning operations, was located on the south side of the main shop building (see Appendix C, Photograph 44). A wash bucket and brush were in use at the washing area (see Appendix C, Photograph 45). The facility Highway Maintenance Manager explained that the Bureau of Highways shops are not equipped with vehicle wash facilities that capture, treat, reuse, or dispose of vehicle wash water. The vehicle washing area was outside on an impervious surface, but wash water containment BMPs had not been installed in the immediate proximity (see Appendix C, Photograph 45). A white foam, indicative of detergent, and wash water were observed on the pavement, leading from the vehicle washing area to the southwest (see Appendix C, Photographs 46) and continuing toward the facility boundary and fenceline (see Appendix C, Photographs 47 and 48). Although an absorbent boom had been installed at the fenceline, wash water continued beyond the facility boundary (see Appendix C, Photographs 48). The facility Highway Maintenance Manager explained that a drainage pipe had been installed some time ago at the base of the slope outfall from the facility (see Appendix C, Photographs 49 and 50). A black drainage pipe was observed leading from the vicinity of the slope outfall (see Appendix C, Photographs 51). A sheen was present on the surface of the turbid flow that was exiting the black drainage pipe (see Appendix C, Photographs 52). White foam accumulation was observed below the outlet of the black drainage pipe, within a tributary to Stemmers Run (see Appendix C, Photographs 53 through 56). Stemmers Run is approximately 0.602 mile to the southwest. The facility SWPPP was viewed as a component of the site visit, and it did not address illicit non-stormwater discharges such as vehicle wash water and associated pollutants. Part III.E.4 of the Permit requires the County to "maintain its illicit connection detection and elimination program to ensure that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated."
- A roadway waste storage area was located in the eastern portion of the site, adjacent to the salt storage building (see Appendix C, Photograph 57). The facility Highway Maintenance Manager explained that the area is used to temporarily store items that are discarded by motorists along the highways, as well as waste materials generated during highway maintenance. The EPA Inspection Team observed concrete, asphalt, tree trimmings, soil, tires, batteries, and various metal goods at the storage area (see Appendix C, Photographs 58 through 60). The roadway waste storage area drains through a set of concrete highway barriers and is located adjacent to a paved swale (see Appendix C, Photograph 61). A wetted flow path was observed leading from the roadway waste storage area along the paved swale to the west (see Appendix C, Photographs 61 and 62). The facility Highway Maintenance Manager explained that a berm had been installed along the fenceline and flow was now directed to the west. Snow plows were stored along the flow path, and hydraulic fluid leaks were present (see Appendix C, Photographs 62 and 63). Furthermore, white salt residue was observed on the pavement, leading along the snow plow storage area toward the slope outfall in the southwest corner of the site (see Appendix C, Photographs 64, 65, and 48).

County Department of Education Cockeysville Service Center – 101 Wight Avenue, Cockeysville, Maryland

The Cockeysville Service Center is used for various Department of Education activities associated with the County's MS4, including the following: (1) bus, truck, and grounds equipment maintenance (including mechanical repairs, fueling, pressure washing, and lubrication); (2) material storage (e.g., vehicle parts, landscaping materials); and (3) vehicle and equipment storage (including County buses).

Part IV.B.2 of the Industrial General Permit requires that a SWPPP be completed and implemented prior to submitting an NOI. The Department of Education Environmental Services Supervisor stated that an NOI had been submitted to MDE in approximately November 2007 to obtain Industrial General Permit coverage for multiple Department of Education facilities, but SWPPPs had not yet been developed. The EPA Inspection Team reviewed the MDE Permitted Facilities Inventory and confirmed that the Cockeysville Service Center had Industrial General Permit coverage under Registration No. 02SW2121.

Oregon Branch is approximately 0.05 mile to the southwest of the facility, and the confluence of Oregon Branch with Beaverdam Run is approximately 0.06 mile to the south. Beaverdam Run is tributary to Loch Raven Reservoir, which is approximately 1.0 mile to the northeast. The EPA Inspection Team observed the following with regard to pollution prevention and good housekeeping at the facility:

- A bus-washing area, which was used for vehicle cleaning operations, was located on the north side of the bus maintenance building (see Appendix C, Photograph 66). A cleaning product container/applicator was present at the washing area (see Appendix C, Photograph 67). A facility Bus Maintenance Mechanic explained that the applicator contained a cleaner/degreaser product that was sprayed onto the bus engine and parts prior to rinsing with the adjacent hose. The bus-washing area was located outside on an impervious surface, but wash water containment BMPs had not been installed. A white foam, indicative of cleaner/degreaser product, and wash water were observed on the pavement (see Appendix C, Photograph 68) and actively flowing from the bus washing area into an adjacent storm drain inlet, a component of the MS4 (see Appendix C, Photographs 69 through 72). The facility Transportation Maintenance Supervisor explained that the mechanics are supposed to use the designated pressure washing pad, which he claimed is connected to the sanitary sewer system (see Appendix C, Photograph 73). Part III.E.4 of the Permit requires the County to "maintain its illicit connection detection and elimination program to ensure that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated."
- A partially-filled 55-gallon drum, which was labeled as gear oil, was stored without containment and overhead coverage BMPs on the west side of the bus maintenance building (see Appendix C, Photographs 74 and 75). Adjacent to this drum were multiple partially filled fuel tanks, which were stored outdoors and open to the elements (see Appendix C, Photographs 74, 76, and 77). A storm drain inlet was located down-gradient from the aforementioned drum and partially filled fuel tanks (see Appendix C, Photographs 78 and 79). Furthermore, a wetted flow pathway was observed leading from one of the maintenance bays of the bus maintenance building to the storm drain inlet (see

Appendix C, Photographs 80). A white foam, indicative of cleaner/degreaser product, and discolored water were present along the wetted flow pathway (see Appendix C, Photographs 81). Discolored water and a slight sheen were observed on the standing water present inside this storm drain inlet (see Appendix C, Photographs 82).

- Another bus-washing area, which was used for vehicle cleaning operations, was located adjacent to the fueling station (see Appendix C, Photographs 83 and 84). A hose was present at the washing area (see Appendix C, Photographs 83 and 84). The facility Transportation Maintenance Supervisor explained that individual bus drivers wash buses at this location. The bus-washing area was located outside on an impervious surface, but wash water containment BMPs had not been installed (see Appendix C, Photograph 84). A curb cut/overland outfall was located at the southeast corner of the site, down-gradient of the bus-washing area (see Appendix C, Photographs 85 and 86). Part III.E.4 of the Permit requires the County to "maintain its illicit connection detection and elimination program to ensure that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated."
- In the southern portion of the facility, decommissioned buses were stored with dismantled parts exposed near an area of standing water (see Appendix C, Photographs 86 through 90). Specifically, a decommissioned bus was not stored with the hood down (i.e., overhead coverage for engines and fluid residues), and another bus was not stored with metal parts raised off the ground (e.g., on wheels with the tire intact). A second curb cut/overland outfall was located at the southwest corner of the site, down-gradient of the decommissioned buses (see Appendix C, Photographs 91 and 92). Oregon Branch is located approximately 0.05 mile to the southwest, and the confluence of Oregon Branch with Beaverdam Run is located approximately 0.06 mile to the south.
- As previously mentioned, a fueling station was located in the eastern portion of the site (see Appendix C, Photograph 93). A spill kit was not maintained at the fueling station, and spilled diesel fuel and petroleum products residues were present on the pavement (see Appendix C, Photographs 93 through 95). Although the fueling station had been provided with overhead coverage, petroleum product residues had migrated to a down-gradient trench drain (see Appendix C, Photographs 95 and 96). The fluid level in the trench drain was approaching capacity, leaving the trench drain with little remaining capacity in the event of a spill (see Appendix C, Photograph 97). Furthermore, a drainage inlet was present beyond the overhead coverage and immediately down-gradient of the trench drain (see Appendix C, Photograph 98). Drainage schematics were not available during the inspection; therefore, the EPA Inspection Team could not verify whether this drainage inlet is connected to the sanitary collection system or to the storm drainage system. Flow was present inside the drainage inlet, however, and no sewage odors were apparent (see Appendix C, Photograph 99). Flow inside the drainage inlet appeared to lead in the direction of an adjacent concrete drainage swale leading east from facility (see Appendix C, Photographs 100 and 101).

Observation 4. County-owned Facilities Requiring NPDES Coverage.

Part III.E.5 of the Permit requires the County to "identify all County-owned facilities requiring NPDES stormwater general permit coverage and submit Notices of Intent (NOI) to MDE for each."

On March 8–9, 2011, the EPA Inspection Team conducted eight site visits at County-owned facilities managed and operated by four different organizational divisions. The following is a summary of the eight site visits and their relevance to the County's obligations under its MS4 permit to identify County-owned facilities that require NPDES stormwater general permit coverage, and to obtain coverage where applicable.

The EPA Inspection Team identified two County facilities with industrial activities where an NOI had not been submitted to MDE:

- County Department of Education North Point Bus Facility – 4242 North Point Road, Baltimore, Maryland. The team identified site concerns pertaining to vehicle fueling and proximity to drainage conveyances, bus washing, salt storage, and pollution prevention practices. (See Section C.1, County Property Management Site Visits, for additional details.)
- County Office of Budget and Finance, Essex Fuel Center (a.k.a., Shop II) – 511 Mace Avenue, Baltimore, Maryland. The team identified site concerns pertaining to vehicle fueling and material storage. (See Section C.1, County Property Management Site Visits, for additional details.)

The EPA Inspection Team identified three County Department of Education facilities where NOIs had been submitted to MDE in approximately November 2007 but SWPPPs had not yet been developed:

- County Department of Education Kenwood Bus Facility – 600 Stemmers Run Road, Baltimore, Maryland. The team identified site concerns pertaining to salt storage, bus washing, and pollution prevention practices. (See Section C.1, County Property Management Site Visits, for additional details.)
- County Department of Education Cockeysville Service Center – 101 Wight Avenue, Cockeysville, Maryland. The team identified site concerns pertaining to bus washing, material storage, decommissioned buses, vehicle fueling and proximity to drainage conveyances**,** and pollution prevention practices. (See Section C.1, County Property Management Site Visits, for additional details.)
- County Department of Education Hopkins Creek Bus Lot – 104 Weber Avenue, Baltimore, Maryland.

The EPA Inspection Team identified one County facility where an NOI had been submitted to MDE, but the SWPPP did not address all potential pollutant sources:

- County Department of Public Works, Bureau of Highways, Perry Road Facility (Shop 7-1) – 7801 Perry Road, Baltimore, Maryland. This was the only site visited by the EPA Inspection Team that had developed a SWPPP. The team identified site concerns pertaining to vehicle washing, material storage, and pollution prevention practices. (See Section C.1, County Property Management Site Visits, for additional details.)

The EPA Inspection Team identified two County facilities where industrial activities were not observed at the time of the inspection:

- Gilroy Facility – 1440 Gilroy Road, Hunt Valley, Maryland. This site is operated by multiple different County organizational divisions.
- County Department of Public Works, Bureau of Highways, Industry Lane Salt Storage Facility – 155 Industry Lane, Cockeysville, Maryland.

The County Watershed Management and Monitoring Section Manager explained that DEPS does not directly manage any County property; therefore, DEPS has assumed an advisory role whereby it assists other County organizational divisions in understanding and complying with the requirements of the MDE Industrial General Permit. NOI submittal and SWPPP development and implementation are the direct responsibility of the seven organizational divisions that manage and operate the County facilities: the Department of Public Works, Bureau of Utilities; Department of Public Works, Bureau of Highways; Department of Public Works, Bureau of Building and Equipment Services; Department of Public Works, Bureau of Solid Waste Management; Department of Education; Community College of Baltimore County; and Office of Budget and Finance, Vehicle Operations and Maintenance.

The County's 2010 Annual Report indicates that "DEPRM [now DEPS] is still identifying all county-owned facilities requiring NPDES stormwater general permit coverage. DEPRM estimates approximately 30 facilities may be included." The EPA Inspection Team reviewed the MDE Permitted Facilities Inventory and counted 27 County facilities that have Industrial General Permit coverage.

The County Watershed Management and Monitoring Section Manager explained that DEPS has attempted to provide specific compliance assistance to one County organizational division each year, such as providing the divisions with a SWPPP template and training on the Industrial General Permit. The County's 2010 Annual Report, Table 3-1 shows the status of County facilities that DEPS "has started assisting," which includes only three of the seven organizational divisions listed above.

Part III.E.5 of the Permit further requires that "the status of pollution prevention plan development and implementation shall be submitted annually." The County's 2010 Annual Report, Table 3-1, shows the status of NOI submittal and SWPPP development, but it does not specifically report on the status of SWPPP implementation (see Appendix B, Exhibit 2). The County DEPS Natural Resource Specialist explained that, for annual reporting purposes, NOI submittal and SWPPP development are tracked by polling each organizational division with an annual email requesting the status. According to the County Watershed Management and Monitoring Section Manager, DEPS had not conducted facility oversight inspections, and tracking of SWPPP implementation was the direct responsibility of the seven organizational divisions that manage and operate the County facilities.

Section D. Watershed Assessment, Planning, and Restoration

Part III.F of the Permit, Watershed Assessment and Planning, requires the County to continue to update and revise watershed assessments that have been developed for its 10 urban watersheds.

Part III.G of the Permit, Watershed Restoration, requires the County to implement those practices identified through Watershed Assessment and Planning. "The overall goal is to maximize the water quality in the County's urban watersheds, using efforts that are definable and the effects of which are measurable."

As a component of this inspection, the EPA Inspection Team obtained information on (1) how the County interprets the impervious surface restoration requirement specified in Part III.G of the Permit; (2) what types of controls (e.g., structural and nonstructural) the County uses to qualify for the impervious surface restoration requirement; and (3) how the County calculates the amount of impervious surface area restored. The following is a brief narrative description of the County's accounting methods for impervious surface restoration.

The County's 2010 Annual Report indicates that the County interprets Part III.G of the Permit as requiring the County to restore 20 percent (continuation of 10 percent from previous permit and 10 percent during the current permit) of the County's impervious cover by the end of the Permit term in June 2010 (see Appendix B, Exhibit 3, Page 10-10). The report indicates that there was a total of 33,171.1 acres of impervious cover to be addressed in the County within fourteen 8-digit watersheds. Based on this figure, the County's 20 percent impervious restoration goal during the two permit terms (2000 through 2010) is 6,634.2 acres. More detailed information on these calculations can be found in the County's 2010 Annual Report (see Appendix B, Exhibit 3, Pages 10-10 and 10-11).

The County stated in its 2010 Annual Report (see Appendix B, Exhibit 3, Page 10-10) that the major focus of the watershed assessment, planning, and restoration activities is implementation of the County's watershed management plans. As of the end of the 2010 reporting period, the County reported that it had completed 10 of the fourteen 8-digit watershed management plans in the County and that the four remaining watersheds do not require plans because they do not have a significant urban component.

The County uses direct and indirect calculations to quantify progress toward the impervious surface restoration requirement. Direct calculations are based on impervious cover in the drainage area, and they include stormwater conversion retrofits or conversion drainage areas and stream restoration of restored reaches. Indirect calculations are based on pollutant removal, including street sweeping, storm drain cleaning, shoreline erosion control, and reforestation (tree planting). Street sweeping and inlet cleaning credits are based on a local street sweeping and storm drain cleaning study that derived the bulk density of collected materials for total nitrogen and total phosphorus concentrations. The County uses the Chesapeake Bay Partnership Model Phase 5.2 to calculate the impervious loading rate. Shoreline erosion control is determined by calculating the average annual shoreline loss mitigated by completed projects, and reforestation is calculated by changing the land use from impervious urban to forest. More detailed

information on these calculations can be found in presentation slides provided by the County (see Appendix B, Exhibit 4).

D.1. Watershed Assessment, Planning, and Restoration Site Visits

On March 8–9, 2011, the EPA Inspection Team conducted two site visits of two different phases of a single watershed restoration effort in the County. The purposes of the site visits were to document site conditions and to assess the County's oversight activities and maintenance of the watershed restoration sites. Summary observations pertaining to these two sites are presented together below. All referenced photographs are contained in Appendix C, Photograph Log.

Spring Branch Restoration Phase I and Phase II

Spring Branch is in the Lock Raven watershed, with direct drainage to the Lock Raven Reservoir municipal water supply. The Spring Branch area was historically used for agricultural activities; subsequent urbanization degraded the stream channels and altered the watershed.

Phase I of the Spring Branch Restoration included the restoration of two miles of Upper Spring Branch, which was completed in 1997. Phase I of the restoration had been in place for 14 years, and over that time extensive natural vegetation had developed (see Appendix C, Photographs 102 and 103). Phase II of the Spring Branch Restoration included the removal of 450 feet of concrete channel, and it was completed in 2008. Phase II of the restoration had been in place for only three years, and natural vegetation was starting to grow (see Appendix C, Photographs 104 and 105). Between the two phases, a total of 2,824 linear feet of Spring Branch had been restored.

Observation 5. Restoration of Impervious Surfaces.

Part III.G.1 of the Permit requires the County to "complete the implementation of those restoration efforts that were identified and initiated during the previous permit term to restore 10% of the County's impervious surface area." Part III.G.2 of the Permit requires the County to "within one year of permit issuance [June 2006], begin to implement restoration of an additional 10% of the County's impervious surface area." The EPA Inspection Team reviewed the methodology for calculating the required 20 percent impervious surface area reduction.

In other words, the Permit requires the County to restore or treat 20 percent of the County's impervious surface area during the 2000 to 2010 Permit terms, which amounts to 6,634 acres of the County's total impervious cover (33,171 acres), according to the County's calculations (see Appendix B, Exhibit 3, Page 10-11). The County's 2010 Annual Report indicated that by the end of the Permit term in October 2010, the County had restored or provided treatment for only 5,849.2 acres or approximately 17.6 percent of the County's impervious cover (see Appendix B, Exhibit 3, Page 10-11).

Appendix A
Inspection Schedule

Agenda for MS4 Program Inspection of Baltimore County, MD – March 8-9, 2011

<table>
<tr><th rowspan="2">Day</th><th rowspan="2">Time</th><th colspan="2">Activity</th></tr>
<tr><th>Team 1</th><th>Team 2</th></tr>
<tr><td rowspan="7">Tuesday March 8, 2011</td><td>9:00 am – 10:00 am</td><td colspan="2">Kickoff Meeting & Program Management Overview –
(Specifically: County overview; departments involved in implementing SW program; regulatory history, etc.)</td></tr>
<tr><td>10:00 am – 11:00am</td><td colspan="2">Municipal Operations and Maintenance (Office) –
County Property Management –
Permit PART III.E.5

Road/ Infrastructure Maintenance (as time permits) –
Permit PART III.E.6</td></tr>
<tr><td>11:00 am – 12:00pm</td><td>Planning of Field Logistics for Tuesday Afternoon</td><td>Illicit Discharge Detection and Elimination (IDDE)/ Industrial (Office) – Permit PART III.E.4

Commercial/Industrial Surveys –
Permit PART III.E.4.b</td></tr>
<tr><td>12:00 pm – 1:00 pm</td><td colspan="2">Lunch Break</td></tr>
<tr><td>1:00 pm – 2:30 pm</td><td rowspan="2">Municipal Operations (Field)</td><td>Post Construction (Office)
Stormwater Management –
Permit PART III.E.1
BMP Maintenance Inspection –
Permit PART III.E.2</td></tr>
<tr><td>2:30 pm – 4:30 pm</td><td>Post Construction (Field, as time permits)
Stormwater Management –
Permit PART III.E.1
BMP Maintenance Inspection –
Permit PART III.E.2</td></tr>
<tr><td>4:30 pm – 5:00 pm</td><td colspan="2">Recap and Logistics Planning for Wednesday</td></tr>
</table>

Agenda for MS4 Program Inspection of Baltimore County, MD – March 8-9, 2011

Day	Time	Activity	
		Team 1	**Team 2**
Wednesday March 9, 2011	8:00 am – 9:30 am	**Municipal Operations (Field)**	**Watershed Assessment, Planning, and Restoration (Field) –** Permit PART III.F and III.G Post Construction (as time permits)
	9:30 am – 11:30 am		
	11:30 am – 12:30 pm	Lunch Break	
	12:30 pm – 2:00 pm	**Watershed Assessment, Planning, and Restoration (Office) –** Permit PART III.F and III.G	
	2:00 pm – 3:00 pm	Reserved for additional discussion or records review (as needed)	
	3:00 pm – 3:30 pm	Internal Discussion[2] (Tentative time slot)	
	3:30 pm – 4:30 pm	Closing Conference[3] (Tentative time slot)	

[2] Internal Discussion – Discussion among members of the EPA Inspection Team. Goal is to compare notes and prepare information to be discussed with the County during Closing Conference. County participation is not expected.

[3] Closing Conference – The County is encouraged to invite representatives from all applicable organizational divisions/departments.